

better represent this strange and unaccountable operation than for one to goad another alternately with a piece of red-hot iron. But the most incongruous and astonishing feature of the epidemic was the holy laugh, which was nearly akin to the ordinary attacks of hysterical laughter, and was regarded, like the convulsions, as a marked instance of the supernatural, and as a token of Divine favor. What could be more grotesque than to have a congregation in the most devout mood laugh aloud during a sermon, unless it was to see some of them gravely dance, and others end the performance by barking on all fours like so many dogs? In 1803 the infatuation had reached such a pitch that these ridiculous antics were esteemed by the credulous as exhibitions of heavenly interest in the unfortunate subjects. A great many attendants on worship were exempt by native absence of susceptibility, while others managed to control the impulses of an unstable nervous system which they could not help feeling. At last, in the name of order, the preachers turned their eloquence against these excesses, and the craze died away.—*Louisville Med. News*, Dec. 10, 1882.—W. R. BIRDSALL, M.D.

c.—MENTAL PATHOLOGY.

CRIMINALITY IN ITS RELATIONS TO SCIENCE.—Lacassagne (*Du criminel devant la science contemporaine*, 1881) discusses this subject, and shows by statistics that crime has certain relations to times of the year. Thus, infanticide occurs most frequently in January, February, March, and April; homicide in July and August; rape most frequently in June. He divides criminals into, first, criminals from sentiment or instinct, under which are comprised the true incorrigible, habitual criminal, who commits crime in consequence of his psycho-physical constitution, and on whom neither punishment nor education can have any effect. Second, criminals by act or on occasion. The passions (anger, jealousy, cupidity, etc.) or the feeling of impunity lead this class to commit crime. The large majority of criminals belong to this class, and in it alone is punishment likely to be of avail. Third, criminals of thought, or, more properly, insane criminals, who, as Lacassagne remarks, should be treated in a criminal asylum and not with the other insane. There are two asylums of this kind in the United States of whose existence the majority of physicians

do not seem to be aware—the asylum at Auburn, New York, and the asylum (not yet completed) at Fulton, Missouri.

Lebon (*La question des criminels*, 1881) makes a somewhat similar division of criminals. First, criminals by fault of heredity. Second, criminals in consequence of certain acquired habits. This division is not as scientific as that of Lacassagne, as insane criminals might be placed under either group by a little straining.

Kräpelin (*Abschaffung des Strafmaases*) arrives at similar conclusions, although he is dominated too much by the idea of free-will, which impairs at times the value of his reasoning.

Ferri divides criminals into the following five classes, perhaps the most scientific division yet proposed. First, criminals, insane or semi-insane, who are specially adapted for treatment in a criminal lunatic asylum. Second, criminals born so, or the incorrigible criminals, who are so physically and psychically perverted as to constitute an atavistic human type of savages born in civilization, who are criminals incapable of reformation from their birth. The third class, habitual criminals, are so from education, and, unlike the former class, do not have any somatic basis for their criminality, and are to some extent capable of reformation. The fourth class are criminals readily swayed by passions, which in them at times acquire an almost irresistible force, and during the sway of these passions they commit crimes for which they afterward do not display any remorse. There is, perhaps, a somatic basis for the criminality of this class, and an attempt at reformation must be followed by many relapses. The fifth class of Ferri are those who are criminals on occasion, a very frequent class, and the most capable of being influenced by punishment. It must be obvious to any one that the first, second, and fourth classes depend for the somatic basis on teratological cerebral defect, which, in the fourth class, has produced a state which may be regarded as in a slight degree analogous to epilepsy. Though these types be the result of somatic causes, it must be remembered that moral forces often produce wonderful effects in ordinary somatic affections, and the application of moral forces as therapeutic measures might here be of service. As a necessary prelude to this, this class of criminals should be deprived of all civil rights other than those of the insane, and be sequestered in properly arranged institutions or penal colonies. It must be remembered that the classes spoken of here as insane are insane criminals, not the criminal insane; that is, those who are by nature criminals, and not those who commit a criminal act as an incidental result of their insanity.

MENTAL CONDITION OF GUTEAU.—Dr. J. G. Kiernan (*Chicago Medical Review*, Dec. 5, 1881) says, concerning this, that the assassin's family history gives decided evidence of hereditary taint. Two uncles died insane, as also two cousins of the first degree, and a daughter of one of these is now an inmate of an asylum. The father of the assassin was peculiar, and displayed abnormal religious views, and, to all appearances, was only saved from an insane asylum by passing into regular business routine under the control of others, for, from all accounts it was impossible for him to carry on business by himself. The mother of the prisoner had, during her pregnancy with him, meningitis, from which she never entirely recovered. The two children born to this mother, subsequently to the prisoner, were both deformed. One had a cranial, the other a cardiac malformation. The prisoner had a marked deficiency in speech in his early life, which it took a long while to correct. The sister of the prisoner has attacks of petit mal, and the brother is said to have suffered from some convulsive disorder during childhood. The half-sister has suffered for years from exophthalmic goitre. A daughter of the sister just mentioned, aged eight, has some obscure convulsive disorder. The prisoner, during his early childhood, and up to about the time of puberty, displayed no peculiarities other than being very reserved, though not taciturn. After puberty he attempted to obtain an education, but, worked on by the peculiar views of his father, entered the Oneida Community, where he was distinguished by his intense egotism and comparative stupidity. He has at several times claimed inspiration for his acts, and is apt to regard any imperative conception as a revelation from Deity. Moral sense, in the true meaning of the term, he has none. His face is markedly asymmetrical, the asymmetry extending to his pupils. His claim of being insane is a quasi-legal plea, that, as he was inspired by the Deity to remove the President, his free agency was destroyed, and a man without a free will is, according to him, in the legal sense, insane. This feigning of insanity is not seldom found among the insane. Laehr (*Archiv für Psychiatrie*, Band i) narrates a case, in which there was marked hereditary taint, who committed a crime against morals, shammed a form of insanity which he had not, and his real insanity came out after the sham was exposed. Dr. Nichols at the conference of experts on this case narrated a case in which a patient committed murder, under, as he believed, the command of the Virgin, but having two young lawyers assigned as his counsel, they advised him to feign insanity, which he did in

the form of dementia. The experts detected both the sham and the real insanity, and had him sent to an asylum, where his insanity developed itself.

Dr. John P. Gray (Report for 1876, page 32) reports a case in which a chronic lunatic who committed a murder claimed to be out of his head.

Similar cases are cited by Delasiauve Ingels and Stark, and by Hughes and Pelman. In concluding this brief résumé I have thought of interest to cite similar cases in the literature, leaving the reader to draw his own conclusions.

Probably one of the strongest arguments that could be advanced to demonstrate the fact that Guiteau is an unquestionable lunatic, consists in the great similarity, nay, almost identity, of his case with certain cases narrated in the literature. Beer (*Allgemeine Medicinische Zeitung*, 3, 4, 5, 1869) describes a number of such instances where individuals of either a narrow mind or with a morbidly exaggerated opinion of self, became depressed in consequence of failure in a law suit, and developed delusions of persecution; others became seized with a perfect furor for litigation, and according as the patient was a literary man, lawyer, scientist, soldier, or official, he became engaged in journalistic, legal, or polemical conflicts, engaged in duels, or sank to the level of a sycophant. Scholz (*Vierteljahrschrift für gerichtliche Medicin*, 2, viii, 1868) cites the case of a man still more resembling Guiteau, who was a vain, egotistical individual, disappointed in seeking office, and in consequence insulted higher officials and even the ruler of the country, thus involving him in the coils of the criminal law. Krafft-Ebing (iii, p. 63, *Beobachtung*, 63 and 64) describes a woman who, after being defeated in a law suit, entered into a delusional basis, studied law and became a perfect expert at the code. Defeated in successive trials at higher courts, she threatened to go to the emperor, and being recognized as insane, developed considerable sarcastic ability in ridiculing the idea of her being a lunatic. He also cites another case of a railroad engineer who, after a dispute about a contract, in which the right was not altogether on the other side, and having signed a compromise by which he agreed to drop all claims against the company, began a series of ridiculous suits, insulted the attorneys, libelled the courts, refused to pay his taxes, and being finally arrested, was arraigned in a court, where he delivered a thundering philippic, threatened to revolutionize the land, and being noticed to make suspicious movements in the direction of his pockets, was examined, and

found to have a loaded revolver. He was committed to an asylum, and there acted the part of martyr. Sander in his excellent paper on *Verrücktheit* refers to the fantastic tendencies, at first obscure to their bearer, which lead to his non-appreciation of society, to brooding, and to the final erection of delusions based on self-conceited notions. He claims it is difficult to elucidate these delusions. The case of David Wemyss Jobson (*St. Louis Clinical Record*, Dec., 1880) who was under my observation for many years, is in point. Prior to the inception of paralytic dementia, this patient involved himself in quarrels with the English courts, was fined and imprisoned. After he came to America he was a journalist and an office-seeker, "ran" for the office of comptroller, and obtained a few votes. He pestered the judges of the various courts so persistently that he became quite a well-known personage. Finally his insanity was recognized and he was sent to an asylum.

One of the most striking and notable features of Guiteau's mental state is his marked moral perversion. That this perversion is a pathological one, as dependent on a cerebral defect as his other abnormal mental manifestation, must be evident to every reflecting psychologist. It is of this form of mental alienation that Krafft-Ebing says (ii, page 266) that the evident symptoms are a moral insensibility, an absence of all moral judgments and ethical conceptions, their place being supplied by purely logically based judgments of a utilitarian character. He adds that the moral rules of the community may be learned in a parrot-like way, but they always remain unassimilated conceptions and fail to act as a guide to the moral lunatic's actions. It is to be remembered here that the case of Guiteau, like others I have observed, strongly proves the incorrectness of Prichard's idea that with this form sensorial perversions are absent. Kraft-Ebing, evidently without having reflected much, endorses this opinion, (ii, page 65.) His own cases contradict this. From the cases cited the reader can draw his own conclusions. It will, however, be obvious that Guiteau's type of insanity is not exceptional, but is well paralleled in literature.

ETIOLOGY OF PROGRESSIVE PARESIS.—Dr. E. C. Spitzka claims (*Chicago Medical Review*, November 20, 1881) that the vaso-motor system plays an important part in the etiology of this psychosis. This view, which Dr. Spitzka has modified from Porucaré and

Bonnet, certainly explains much that is mysterious in the etiology of the disease. The sexual-excess theory, so long the favorite one with the Utica school, was always very dubious and has received its *coup de grâce*. As Dr. Spitzka says, the supposition of a strictly inflammatory process is incompatible with the occasional appearance of epileptiform spasms not followed by those immediate sequelæ which should follow such an inflammation, and this theory is incompatible with the very rapid and relatively complete remission of the symptoms. He cites the fact that certain of the physical causes do not always act through the channel of a meningitis or other inflammatory process. In Dr. Spitzka's own observations every patient dying during an epileptiform state, or with apoplectiform symptoms, presented the capillary emboli described by Lubimoff as characteristic of a blood stasis;—which stasis he considers the expression of a paralysis of the muscular coat of the blood-vessels over-distended by the efferent blood-current, in itself an indication of hyperæmia,—a cortical hyperæmia which would explain the expansive ideation and the motor excitation, the arrest of the blood-current through stasis, and the subsequent congestive and comatose state.

“A sudden stasis causing sudden arrest of the cortical functions would satisfactorily account for the epileptic manifestations. A cortical hyperæmia, as a factor that may on the one hand vanish with the most violent storm sweeping over the mental plane, without leaving a permanent defect, and on the other hand, in its repeated recurrence determine those structural changes which account for the permanent symptoms of the disease, would also, in its necessarily progressive severity, account for the progressive greater gravity of each exacerbation, and the final preponderance of symptoms of subtraction, such as paralysis, lacunæ in the memory, aphasia, and coma, over those of functional excitation, such as the destructive tendencies, constructive schemes, ambitious delusions, and flight of ideas of the earlier periods.

“As the disease progresses, and the resisting tone of the vessels decreases more and more, stasis is found to occur not only in the exacerbations of the disease, but also in the intervals,—here more restricted in extent and less pronounced; so that with a proper manipulation of histological specimens he is prepared to say that no lesion will be found so constantly in the terminal periods of the disease as the capillary thrombi resulting from stasis-like conditions. Of course, with this explanation we are as much in the dark as ever as to the organic basis of the vaso-motor difficulty.

He claims that this consists in a probably impalpable morbid state of the encephalic vaso-motor centre. Such a morbid state it requires no stretch of theory to consider inducible by mental overstrain, by the repeated hyperæmias of alcoholism, rheumatism, and certain forms of syphilis, or by typhus fever, insolation, and the molecular disturbances determined by concussion, directly or indirectly involving the skull contents."

Dr. Spitzka's observations have been corroborated to a certain extent by Dr. Grieve (*British Medical Journal*, December 3, 1881), the medical superintendent of the Colonial Lunatic Asylum, Berbice, British Guiana. Dr. Grieve was familiar with progressive paresis in England, and it is certainly impossible that he should fail to detect it when present. Yet out of seven hundred lunatics under his care but one was a case of progressive paresis,—a percentage about one ninety-eighth of that of England. The patients are of various races; Creoles and East Indians make up about four fifths of the asylum population. The remaining fifth is principally composed of negroes and Chinese; Europeans form about one and a half per cent. of the asylum population, and yet the only case of the psychosis is a European. All the alleged causes of the psychosis are markedly present at Berbice except one, mental excitement. Dr. Grieve comes, therefore, to the very sound conclusion that this is a very potent factor in the production of the psychosis. In this conclusion he is not entirely original. Austin long ago expressed a similar opinion, and also did Crichton Browne (*West Riding Lunatic Asylum Reports*, volume vi). The appearance of this disease among the various races mentioned, when they are exposed to mental strain, certainly tends to confirm this opinion. The tables given in the *JOURNAL OF NERVOUS AND MENTAL DISEASE*, October, 1880, certainly show that many of the races mentioned exhibit this psychosis when exposed to the mental strain of large cities.—J. G. KIERNAN, M.D.

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d—NORMAL HISTOLOGY OF THE NERVOUS SYSTEM.

THE RELATION OF NERVES TO PIGMENTED CELLS.—The changes in color induced in the skin of certain animals, such as frogs, snakes, and the chameleon, by section of the nerves, or by the direct action of light, are due, as is well known, to contractile changes in the pigmented cells of the integument. These phenomena, striking in themselves, have recently assumed a new interest in view of the possible analogy existing between the movements of their processes and those of the pigmented cells of the retina, which dip down between the rods, as described by Ewald and Kühne. Hence the work of Ehrman¹ possesses an interest wider than that attaching to any simple morphological detail in the structure of the frog. E., by treatment of the skin of the back of the green frog with acetic acid and afterward with gold chloride is able to trace with distinctness the termination of cutaneous nerves in the processes of the pigmented cells. The nerves and cell processes either merge insensibly into one another, or show a sharp line of demarcation by the abrupt termination of the pigment deposit. Such a connection between nerves and the chromatophores has already been shown by Leydig to exist in snakes, but has not been demonstrated before in the frog.

Ayres² states that he has recently traced a direct connection between nerve fibres from the ciliary nerves and branches of pigmented cells of the choroid, in the human eye.

MINUTE STRUCTURE OF THE CORTEX OF THE CEREBRUM.— The difficulties in technique which are encountered in histological

¹ Ehrman : Ueber Nervenendigungen in den Pigmentzellen der Froschhaut, *Sitzungsb. d. k. Akad. d. Wissensch. Math.-naturw., Cl.*, 3 Abth., lxxxvi, 167.

² Ayres : Contributions to the pathology of sympathetic inflammation, *Arch. of Ophthalmology*, vol. x, No. 3, p. 278, note.